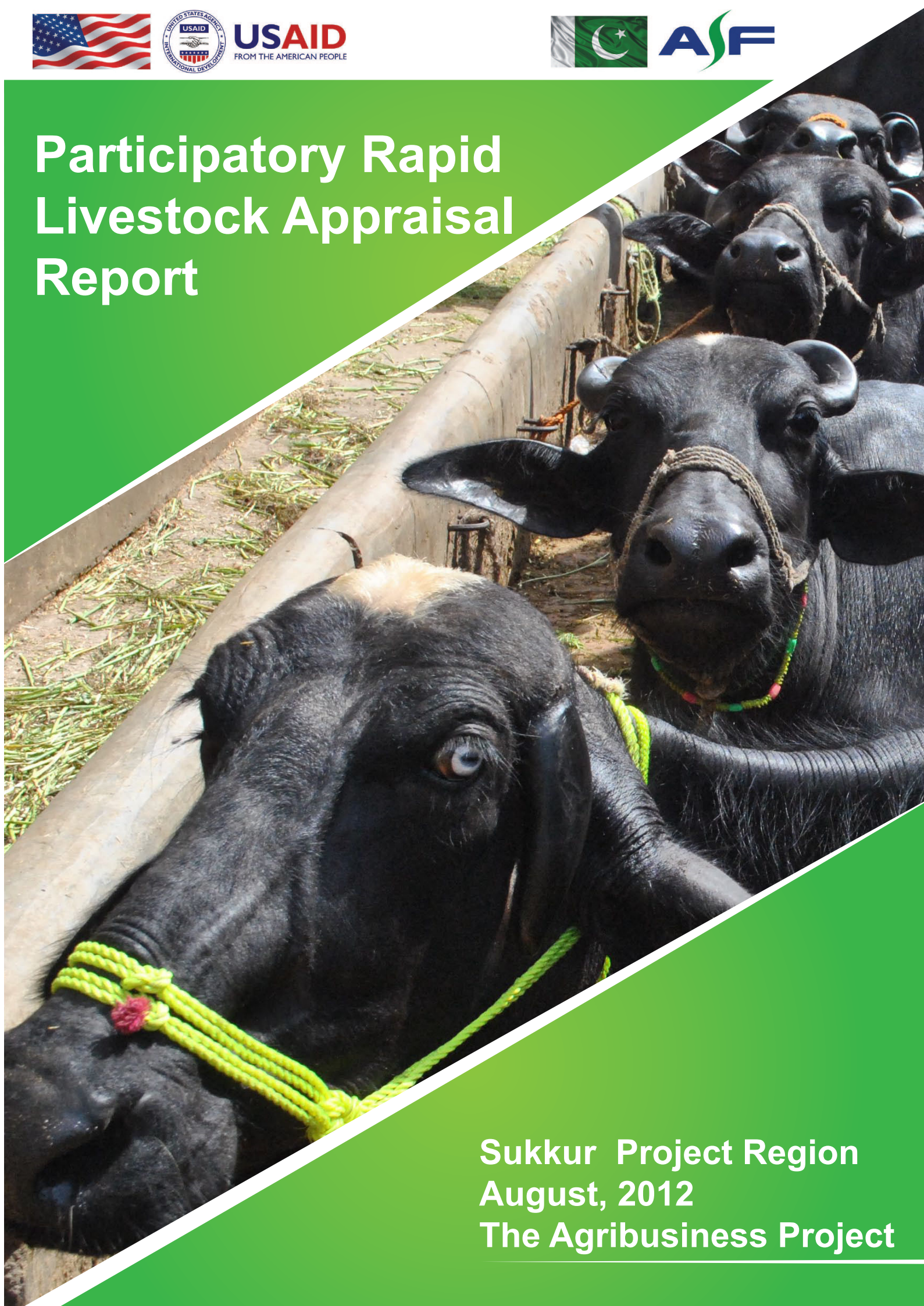# Participatory Rapid Livestock Appraisal Report

Sukkur Project Region
August, 2012
The Agribusiness Project

Acronyms

ASF	Agribusiness Spport Fund
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
GDP	Gross Domestic Production
MINFAL	Ministry of Food Agriculture and Livestock
NGO	Non-Governmental Organization
PRLA	Participatory Rapid Livestock Appraisal
TAP	The Agribusiness Project
USAID	United States Agency for International Development
WHO	World Health Organization

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Executive Summary

The Agribusiness Project funded by USAID Pakistan is being implemented by Agribusiness Support Fund (ASF) in collaboration with International and national partner organizations. This five years project commenced on 10th November, 2011 and aims at increasing competitiveness and productivity of horticulture and livestock sub-sectors in Pakistan. The overall goal of the Project is to support improved conditions for broad-based economic growth, create employment opportunities and contribute to poverty alleviation through increase in competitiveness of horticulture and livestock value chains in partnership with all stakeholders. During the first year of the project, a preparatory program was undertaken to gauge the potential of the sub-sector and to prioritize value chains for various project regions including the Sukkur Project region. Findings from the Participatory Rapid Livestock Appraisal (PRLA) will enable the project to identify and prioritize livestock value chains, opportunities, constraints and state of the business development services to provide required basis for focusing project interventions.

Within the framework of the cluster and value chain approach, a two-pronged approach was adopted, first preparation for PRLA exercise in the field and second collection of secondary data and development appropriate tools for quantification of factors to be measured on a scale for ranking/prioritization. This report pertains to work completed based on both secondary data and primary appraisals of livestock sub-sector.

The PRLA methodology provides for probing, analysis and validation of information as they unfold during the field work. Seven factors were applied for quick analysis of the sub-sector. These include; (i) extent of employment generation; (ii) commercial worth; (iii) percentage of small farmers associated; (iv) women involvement; (v) households associated with the value chains; (vi) understanding growth potential; and (vii) vulnerability of the concerned value chains. Covering 50% of the districts, the exercise was undertaken in the randomly selected settlements/villages within each cluster/region. Each focus group consisted of 10-15 stakeholders, a representative sample of sub-sector, whereas, 2-3 FGDs were carried out in each district.

Livestock and Dairy sector has played a significant role in national economy and rural social system over the years by providing quality food and export incomes. Livestock sector contributes almost 55.1% to the value addition in the agriculture sector, and nearly 11.5% to Pakistan's GDP, which is higher than the support made by the crop sector (47.4% in agriculture and 10.3% in GDP). The role of livestock segment in the rural economy of Pakistan is very important as 30-35 million rural population earn their bread and butter through this. Within the livestock sector, milk is the largest and the single most important commodity. Pakistan is the fifth largest milk producer in the world. The total value of milk produced is higher than the value of two major crops, that is, wheat and cotton.

Meat exports from Pakistan have recently grown due to heavy demand from the Middle Eastern countries like UAE, Saudi Arabia and Kuwait. In recent years, net foreign exchange earnings from livestock sector were nearly Rs. 51 billion, which accounted 11 percent of the overall export earnings.

As per analysis on the basis of secondary data, Pakistan's share in world production was 4.82% in milk, 2.17% in beef, 3.13% in mutton meat, 0.24% in fish, 17.91% in buffalo hides, 1.93% in cattle hides, 4.93% in goat skins and 1.85% in sheep skins.

Sindh contributes 30.05% to the national milk production. In addition, Sindh shares 29.31% beef, 19.85% mutton, 57.79% fish, 35.87% buffalo hides, 28.63% cattle hides, 20.43% goat skins and 20.84% sheep skins to the total production on national level.

The share of Karachi region in Sindh was 18% for milk, 5.64% for beef and 23.53% for mutton. Fisheries contributed 40.41% to the total production on provincial level. Buffalo hides made 39.87%, cattle hides 42.30%, goat skins 36.65% and sheep skins 34.41% of the Sindh production.

Livestock are natural factories to convert roughage (grasses, shrubs, etc) into quality-food i.e. milk and meat. It is an established nutritional fact that animal proteins are superior to vegetable proteins for the supply of essential amino acids. Livestock also provide raw material for industries and create markets and capital. For a large population of rural household in rain-fed agricultural production system, livestock provide security against crop-failure. For the poor in the villages, it is a form of social security, cashing it at the time of need. Livestock are also used in sports and entertainment and are also considered a symbol of prestige in certain areas of Pakistan.

Sukkur region is one of the most resource rich area and bestow promising employment generation opportunities in the region. One can easily asses the livestock sector potential as one of the Pakistan`s leading business company "ENGRO FOODS" has established its milk processing plant over here. Additionally two more dairy sector's leading companies namely Nestle Pakistan and Millac has spread their business through establishing linkages with local farmers and herdsman. Apart of engaging people in milk collection, these companies have also trained people in livestock management, and resources such as milk chillers in order to elude its perishability and enhance productivity. The PRLA findings heralds that there is huge potential in this sector which is yet to be discovered. Apart of dairy and meat, Sukkur Region is also resourceful zone for inland fisheries. There are hundreds and thousands of small and medium fish farms owned by local people. Sukkur has geographic advantage as it is located in the center point and junction where three provinces Sindh, Punjab and Baluchistan area easily accessible. Hence, Sukkur region if excel in livestock and fisheries production could have access to good markets domestically and due to advantage of nearby seaport of Karachi, it can earn significant foreign exchange.

According to PRLA priority index among three major value chains milk stands at the tops of the row with 4.9 points, followed by meat sector with 3.79 points and fisheries with 3.14 point. Some of the major challenges came under limelight during discussions as pertaining to dairy sector includes provision of veterinary services, availability of veterinary services, and animal husbandry trainings for livestock owners. There are attitude issues as well, people still keep animals to satisfy their ego as in local culture livestock holders are considered more respectable and symbol of wellbeing. There is need to transform peoples' approach towards commercialization and animal handling on scientific approach. Milk is more perishable, there are no proper markets for milk, and hence losses are higher in milk value chain. Additionally, due to poor road infrastructure, and public transport service people do not have access to major towns and cities. This issue is also related to other value chains including meat and fisheries. If people are provided proper incentive based capacity building in animal handling programs, accessible and quality extension services and interest free loaning to expand their diary business this sector may bring revolutionary change in local area.

Improve technical facilities, fish farm practices and technical assistance are some challenges witch are confronted by fisheries sector. Farm owners are completely non-concerned about variety, quality and food protocols. Due to absence of proper processing facility, fish farm owners could not reach to distant high end markets. Some of the farms are merely established because of the waterlogging; as land could not be used for agricultural purposes. Government's fisheries sector also found dormant and serious disconnection is found between local community and concerned line department. Inland fisheries sector in Sukkur project region is at embryonic stage, yet despite of aforementioned lacking facilities it has made robust earnings in past couple of years. If proper attention towards identified issues is given, this sector may also create further business opportunities for scores of people in the area.

Introduction

Background

The Agribusiness Project funded by USAID, is being implemented by Agribusiness Support Fund (ASF) in collaboration with International and national partner organizations. This five years project commenced on 10th November, 2011 and aims at increasing competitiveness and productivity of horticulture and livestock sub-sectors in Pakistan. The overall goal of the Project is to support improved conditions for broad-based economic growth, create employment opportunities and contribute to poverty alleviation through increase in competitiveness of horticulture and livestock value chains in partnership with all stakeholders.

The Agribusiness Projects objective is to: i) To strengthen the capacity in horticulture and livestock value chains to increase sales to domestic and foreign markets; ii) Strengthen capacity of small holder and enterprises to operate autonomously and effectively; and ; iii) increased agriculture/livestock efficiency and productivity through adoption of new farming techniques and technological innovations among targeted beneficiaries. Project activities encompass focused technical and capacity building assistance to upgrade and strengthen capacities in the priority value chains in both livestock and horticulture sectors; and a national cost sharing grants program offering a wide range of customized assistance to key players within the priority value chains.

During the first year of the project, a preparatory program was undertaken to gauge the potential of the sub-sector and to prioritize value chains for various project regions including the Sukkur Project region. PRLA is a short cut yet efficient method for data collection. It is a methodology for action research that uses a range of techniques and plays an important role in probing, developing, analyzing and using indigenous knowledge as a foundation from which to build more productive, valid and sustainable platform for the field work. Findings of the PRLA will enable the project to identify and prioritize livestock value chains, opportunities, constraints and state of the business development services to provide required basis for focusing project interventions.

The Livestock sector is broad and covers highly diverse agro-ecological, social and economic dimensions across countries, regions and continents. In Pakistan, Livestock is an integral component and considered as the backbone of the agriculture sector, as in any other agricultural economy. The livestock accounts approximately 55.1% of the agriculture value added and 11.5% to the Gross Domestic Product (GDP). Almost 35-40 million rural households are dependent on livestock for their livelihood, deriving 30-40%of their income from livestock. The primitive state of infrastructure and technology catalyzed by the limited availability and high cost of inputs has halted the growth of a polymorphic, high value livestock sub sector that, if driven in the right direction, can contribute towards food security, import substitution, export led growth and poverty alleviation through employment generation. Pakistan has immensely large livestock resources and there is need to exploit and utilize these resources for the substantial growth of the sector. There is a need to focus on understanding productivity gaps, factors blocking development and expansion of livestock value chains, to identify hurdles causing bottlenecks, uncertainties and inefficiencies that hinder competitiveness. Interventions are required across all nodes of the livestock value chains, especially value addition, processing and marketing in order to increase the competitiveness and enhance capabilities of value chain operators to respond to domestic, regional and international markets.

The reports articulate for each region separately to enable better targeting and focusing project interventions. This report covers the project region of Sukkur. Within the framework of the cluster and value chain approach, a two-prong approach was adopted, first preparation for PRLA exercise in the field and second to collect secondary data and develop appropriate tools for quantification of factors so that it can be measured on a scale for ranking/prioritization. This report pertains to work completed based on both secondary data and primary appraisals of Livestock sub-sector.

Objectives

The objectives of PRLA exercise were to a) identify and prioritize the key livestock value chains in terms of growth potential and capability to benefit as many stakeholders across the value chains b) Identify relevant constraints impeding the realization of opportunities c) assess current state of the extension services to the livestock farmers and d) explore linkages of key livestock stakeholders with the local and national markets.

The PRLA was conducted with a view to prepare the stage for focusing project intervention as well as for the project baseline and value chains benchmarking studies. The PRLA results will enable the project to prioritize value chains (validating the cluster approach), set benchmarks, and support establishment of a database to generate primary data on key indicators to be maintained and updated during the course of project implementation and afterwards supporting the planning, monitoring, evaluation and communication functions of the project.

Methodology and Approach

The consultant(s) assisted the project staff through a strategic exercise for identification and prioritization of the value chains to prepare a stage for the baseline study and in close consultation with the project management adopted the following methodology to implement the PRLA.

Desk Review and Study Matrix
The PRLA team , within the framework of the cluster and value chain approach, reviewed the existing data, including the secondary data on the livestock sector, published reports and developed objective criteria for prioritization of value chains within the livestock subsectors i-e, Dairy, Meat, Livestock by products value chains. Following sources were used to collect secondary livestock data for Sukur region;

i)   Federal bureau of statistics
iii) Pakistan Livestock census 2006 database
iii) FAO Database
iv) Livestock and Dairy Development Board
v) Livestock and Fisheries Development, Government. of Sindh
vi) Economic Survey of Pakistan.
vii) Information from past research papers and reports from various sources.

The PRLA team, prior to inception of the field work, developed approach and methodology for the study based on international best practices. The methodology focused on quantification of factors, by assigning appropriate weights and scales, so as to contribute to ranking and selection of the priority value chains based on a seven factored grid analysis that included (i) extent of employment generation; (ii) commercial worth; (iii) percentage of small farmers associated; (iv) women involvement; (v) households associated with the value chains; (vi) understanding growth potential; and (vii) vulnerability of the concerned value chains.

Data Collection Tools and Techniques
The PRLA team developed and pre-tested tools for undertaking the rapid appraisal exercise in project regions. These tools included;

i) A five factored grid analysis matrix
ii) Paired ranking matrix for opportunities and constraints
iii) Venn-diagrams for mapping market linkages and service providers:

These tools were pre-tested in the field before being applied to collect primary data by holding Focus Group Discussions (FGDs) with selected groups of relevant stakeholders such as livestock farmers, inputs suppliers, processors, traders, retailers and service providers. Later the data collected through FGDs was verified through validation workshops.

Sample Size
The PRLA exercise was undertaken in all project regions to validate production clusters and establish priority value chains on a regional level. 2-3 FGDs were facilitated and conducted in randomly selected settlements/villages within each cluster/region, covering approximately 50% of the districts in each region. A group of 10-15 stakeholders related to the livestock value chains participated in each FGD.

Staff Orientation and Pre-Testing of Tools
The PRLA team designed and co-facilitated a two-step training workshop comprising the orientation of the project staff regarding the use of pre designed tools, FGD facilitation & data collection techniques to be used in the field; and a real pre-testing field exercise followed by a debriefing session to help understand and discuss the constraints faced during the exercise in order to revise and improve the tools and techniques.

Primary Data Collection
7 FGDs were organized and facilitated by trained project staff in randomly selected clusters from within 07 districts of Sukkur Project Region. The participants of FGDs that represented stakeholders from each node across the livestock value chains selected and prioritized value chains through mutual consensus during group discussions that were held and facilitated by the project teams.chains selected and prioritized value chains through mutual consensus

during group discussions that were held and facilitated by the project teams.

Backstopping and Monitoring
The consultants provided a continued coaching and backstopping support to the project staff during orientation, pre-testing and PRLA exercise in project target regions.

Data Analysis and Reporting
The primary data gathered via the field investigations through observations and FGDs was recorded using pre designed tools and later reproduced in tabulated form using MS Excel sheets. The final analysis was done by applying statistical tools to the primary data and shown in the form of bar graphs and tables to provide a highlighted outlook on the weaknesses and strengths of the livestock value chains.

Appraisal of Livestock and Fisheries Value Chain based on Secondary Data

Data collection and mining

The secondary data for the livestock sector was collected from various sources mentioned in the desk review and study matrix. The USAID's Pakistan livestock database 2006 and Pakistan livestock Census 2006 data were used as prime source (since these were the only two providing livestock data on district level for all four provinces) and using projections a timeline data was obtained.

Overall analysis of value chains

The projected data was analyzed using tabulation and basic statistical tools such as linear regression to come up with final scoring on the basis of grid analysis (Table1).

Table 1: Overall analysis of value chains								
Indicators	Milk	Beef Meat	Mutton Meat	Fish	Buffalo Hide	Cattle Hide	Goat Skin	Sheep Skin
Percentage Growth	3.23%	3.33%	2.13%	2.27%	2.99%	3.70%	2.67%	1.18%
Pakistan Share in World	4.82%	2.17%	3.13%	0.2%	17.91%	1.93%	4.93%	1.85%
Sindh share in Pakistan	30.05%	29.31%	19.85%	57.59%	35.87%	28.63%	20.43%	20.84%
Karachi Project Region share in Sindh	19.14%	3.25%	6.03%	35.22%	16.45%	17.45%	6.79%	31.64%
Productivity Gap	60.92%	80%	89%	99.98%	69.61%	85.30%	83.00%	92.09%
Source:(Estimates based on the data collected through Pakistan Livestock Census 2006)								

Four livestock value chains that were analyzed on the basis of secondary data include:

i) Dairy value chain
ii) Meat value chain (Inclusive of Beef Meat and Mutton Meat)
iii) Livestock byproducts value chain (Inclusive of Buffalo hide, cattle hide, goat skin and sheep skin)
iv) Fisheries value chain (Primarily Inland Fisheries or aquaculture)

The analysis on the basis of secondary data gave a broader and comparative outlook of the livestock value chains at regional and national levels and helped understand the glitches and potential within these value chains. The analysis showed growth of livestock products and by products and inland fisheries in Sindh and Pakistan over the past five years, Pakistan's share in world production, Sindh's share in national production and Sukkur Project region's share in province.

Analysis of Milk value chain

Milk is the single most important livestock product. According to FAO statistics production has shown a steady growth over the past few years, but this increase is attributed to the increase in number of milking animals and not due to increase in yield per animal. There was an actual decrease in the milk production during the year 2010 because of the losses in livestock population due to natural calamities but it is not shown on the index due to unavailability of the data from disaster management sources. In Sindh meat consumption and production has grown faster than the growth seen in production of milk, comparatively.

Table 2:Subsector wise production in dairy subsector										
Province	Average Animal Yield		Total animals in milking				Total Liters Produced			
	Cow	Buffalo	Cow	%	Buffalo	%	Cow	%	Buffalo	%
Sindh	6.61	8.9	2,143,036	24.68	3,051,119	29.86	14,180,469	26.71	27,164,112	33.1
Pakistan	6.04	7.87	8,684,435	100	10,219,673	100	53,093,386	100	82,061,309	100
Source: Federal Bureau of Statistics, GoP P = Provisional										

The above Table 2 shows that Sindh region contributes to the total milk yield of Pakistan by 26.71% through cows whereas 33.1% through buffaloes that makes the province's contribution second highest in the country.

Evidence shows that formal milk markets will grow only as household incomes increase, and they are therefore expected to predominate for many years to come, given trends in demand. Besides the price advantage, other factors underlying the high demand are the income and relatively high-value employment in Sukkur project region. Table 3 below shows the milk production in Liters in Sukkur region.

Table 3: Sukkur region milk production in liters						
District	2006	2008-09	2009-10	2010-11	2011-12	Average
Shikarpur	4,327,683	4,766,361	4,922,962	5,084,817	5,252,020	4,776,766
Khairpur	3,333,735	721,368	745,153	769,738	795,138	1,105,733
Sukkur	1,430,592	1,163,406	1,198,908	1,235,526	1,273,264	1,218,062
Naushehro Feroz	2,622,861	1,482,021	1,533,303	1,586,410	1,641,398	1,669,087
Dadu	2,618,819	2,935,665	3,031,102	3,129,727	3,231,597	2,934,919
Larkana	2,269,123	2,503,702	2,585,281	2,669,591	2,756,682	2,508,252
Jacobabad	2,217,857	2,442,671	2,522,926	2,605,874	2,691,563	2,448,004
Qamber-Shahdadkot	1,997,139	2,094,406	2,160,913	2,229,467	2,300,083	2,111,349
Ghotki	1,500,462	1,621,517	1,674,117	1,728,472	1,784,612	1,628,758
Kashmore	1,160,380	1,284,195	1,326,115	1,369,439	1,414,190	1,286,065
Jafarabad	1,087,231	1,201,535	1,239,617	1,278,874	1,319,316	1,202,866
Sibi	112,071	93,239	95,647	98,086	100,551	96,999
				In Million Tons		1.9156
Source : Livestock Census 2006						

Analysis of Meat value chain
Meat industry in Pakistan is developing these days. The export of meat (beef, mutton, and camel) has increased from $ 108.54 million (2010-11) to $123.61 million in 2011-12 showing an increase of 13.9 per cent. Dairy animals are also being used as beef animals after completion of its productive years. Male calves of dairy animals and dairy bulls when no further required for breeding purposes are also utilized for beef purposes.

Meat sector hasn't achieved its potential amongst the livestock value chains in Pakistan primarily due to nonexistence of breeds specific to meat production. Further, there is no trend of fattening animals for meat purpose. However, analysis on the basis of secondary data showed that over the past few years there had been an increase in the meat production due to the ever increasing demand in the regional and national markets for the protein from animal origin.

Meat is an ignored and rather underdeveloped sector amongst the livestock value chains in Pakistan primarily due to nonexistence of breeds specific to meat production. Further, there is no trend of fattening animals for meat purpose. However, analysis on the basis of secondary data showed that over the past few years there had been an increase in the meat production due to the ever increasing demand in the regional and national markets for the protein from animal origin.

According to the estimates of Pakistan Meat Processor Exporter Association the annual beef production of the country is 1.549 million ton, mutton 0.587 million ton and poultry production is 0.106 million ton. Beef contributes almost 50 per cent of total meat exports of the country, while mutton's share is around 23 percent and poultry is 17 percent. Exports account for only 1.8 percent of the total production.

The trend of meat production in Pakistan is illustrated in above tables showing the overall livestock population and meat production in Table 4 and 5 below respectively.

Table 4: Livestock Population in Pakistan (000 Heads)

Species	2006-07	2007-08	2008-09
Cattle	30.7	31.8	33
Buffalo	28.2	29	29.9
Sheep	26.8	27.1	27.4
Goat	55.2	56.7	58.3
Camels	0.9	1	1
Horses	0.3	0.3	0.4
Asses	4.3	4.4	4.5
Mules	0.2	0.2	0.2
Source:Ministry of Livestock and Dairy Development			

Table 5: Meat Production in Pakistan (000 Tons)

Species	2006-07	2007-08	2008-09
Beef	1,498	1,549	1,601
Mutton	566	578	590
Poultry Meat	554	601	652
Total Meat (Excluding Edible offals)	2,618	2,727	2,515
Source:Ministry of livestock and Dairy Development			

During discussions with FGDs it was seriously realized that the bottleneck in the meat supply chain lies at the animal production and rearing level. The Sukkur region is not producing enough animals to meet the local demand for meat. There is a huge production loss due to early slaughtering / mortality of male calves especially buffalo calves. It is estimated that 0.5 million male calves are slaughtered before attaining the age of one month. Due to economic reasons the farmer does not offer milk to the calves, which is a critical survival factor of the calves. Consequently a huge production potential is lost every year.Table 6 below depicts the district wise slaughtered animals in the year 2006.

Table 6: District wise animal slaughtered in Sukkur region for Year 2006

Province	Buffalo	Cow	Sheep	Goat	Total
Sindh	1,106,505	964,186	968,726	2,158,870	5,198,287
District					
Shikarpur	34,931	30,438	30,582	68,154	164,107
Khairpur	60,235	52,487	52,734	117,523	282,981
Sukkur	35,300	30,760	30,905	68,874	165,841
Naushahro Feroze	29,490	25,697	25,818	57,537	138,543
Dadu	31,474	27,426	27,555	61,408	147,864
Larkana	52,776	45,988	46,204	102,970	247,940
Jacobabad	28,917	25,198	25,316	56,419	135,852
Qamber-Shahdadkot	14,371	12,522	12,581	28,039	67,515
Ghotki	17,111	14,910	14,980	33,385	80,389
Kashmore	11,396	9,931	9,977	22,236	53,542
Jafarabad	21,971	19,145	19,235	42,868	103,221
Sibi	8,396	7,316	7,350	16,381	39,445
Source: Livestock census 2006					

Whereas, district wise meat production can be seen below in Table 7.

Table 7 :District wise meat production in Sukkur project region (000 Tons)								
	2009-10		2010-11		2011-12		Averages	
District	Beef Meat	Mutton Meat	Beef Meat	Mutton Meat	Beef Meat	Mutton Meat	Beef Meat	Mutton Meat
Shikarpur	11.4	1.8	11.8	1.8	12.2	1.8	11.3	1.7
Khairpur	19.7	3.0	20.4	3.1	21.1	3.2	17.5	3.0
Sukkur	11.6	1.8	12.0	1.8	12.4	1.9	10.3	11.5
Noushehro feroz e	9.7	1.5	10.0	1.5	10.3	1.5	18.4	10.8
Dadu	10.3	1.6	10.7	1.6	11.0	1.7	21.2	6.3
Larkana	17.3	2.7	17.9	2.7	18.5	2.8	24.8	10.6
Jacobabad	9.5	1.5	9.8	1.5	10.1	1.5	13.6	1.1
Qamber-Shahdadkot	4.7	0.7	4.9	0.7	5.0	0.8	3.9	18.4
Ghotki	5.6	0.9	5.8	0.9	6.0	0.9	30.2	5.4
Kashmore	3.7	0.6	3.9	0.6	4.0	0.6	7.0	7.2
Jafarabad	7.2	1.1	7.4	1.1	7.7	1.2	21.8	8.7
Sibi	2.8	0.4	2.8	0.4	2.9	0.4	5.9	1.0
							15.5	7.1
Source: FAO database								

Livestock byproducts value chain

The entire livestock products and byproducts are importent for the economy of a country. These livestock products should satisfy the real and genuine demands made by the fast growing human population in the country. This means that livestock contribute to the proper use of land resources and furnish valuable food for proper nourishment of the nation as well as the other useful livestock products.

Table 8: Overall position of products of livestock in Sindh						
Species	Units	2007-08	2008-09	2009-10	2010-11	2011-12
A. Milk (Gross Production)	000 Tons	**42,191**	**43,562**	**44,978**	**46,440**	**47,951**
Cow	"	14,437	14,982	15,546	16,133	16,741
Buffalo	"	26,231	27,028	27,848	28,694	29,565
Sheep	"	35	36	36	36	37
Goat	"	700	719	739	759	779
Camel	"	787	798	808	818	829
B. Milk (Human Consumption)	000 Tons	**34,058**	**35,160**	**36,299**	**37,475**	**38,690**
Cow	"	11,550	11,985	12,437	12,906	13,393
Buffalo	"	20,985	21,622	22,279	22,955	23,652
Sheep	"	35	36	36	36	37
Goat	"	700	719	739	759	779
Camel	"	787	798	808	818	829
Meat	000 Tons	**2,727**	**2,842**	**2,965**	**3,095**	**3,233**
Beef	"	1,548	1,601	1,655	1,711	1,769
Mutton	"	578	590	603	616	629
Hides	000 No's	**12,199**	**12,612**	**13,039**	**13,481**	**13,938**
Cattle	"	6,032	6,260	6,496	6,741	6,995
Buffalo	"	6,070	6,255	6,445	6,640	6,842
Camels	"	96	97	99	100	101
Skins	000 No's	**45,325**	**46,351**	**47,402**	**48,478**	**49,582**
Sheep Skin	"	10,251	10,373	10,495	10,620	10,745
Goat Skin	"	21,860	22,452	23,061	23,685	24,327
Fancy Skin	"	13,215	13,526	13,846	14,173	14,509
Lamb skin	"	3,045	3,081	3,117	3,154	3,192
Kid skin	"	10,170	10,445	10,728	11,019	11,318
Wool	000 Tons	41.1	41.5	42.0	42.5	43.0
Hair	"	21.4	22.0	22.6	23.2	23.8
Edible Offals	"	317	325	334	344	353
Blood	"	54.1	55.4	56.8	58.3	59.8
Guts	000 No's	45,788	46,824	47,886	48,974	50,089
Casings	"	12,988	13,426	13,879	14,347	14,832
Horns & Hooves	000 Tons	45.3	46.7	48.1	49.5	50.9
Bones	"	672.1	692.4	713.4	735.1	757.5
Fats	"	215.3	221.6	228.1	234.8	241.7
Dungs	"	948.7	977.8	1,008	1,039	1,071
Urine	"	293.4	301.9	311	320	329
Heads & Trotters	**000 Tons**	**197.0**	**202.5**	**208.2**	**214.0**	**220.1**
Cattle	"	37.5	38.9	40.4	41.9	43.5
Buffalo	"	66.0	68.0	70.0	72.2	74.4
Sheep	"	26.8	27.2	27.5	27.8	28.1
Goat	"	64.7	66.5	68.3	70.1	72.0

Source: The figures for livestock products for the year 2005-06 were calculated using the livestock population reported in livestock census2006 and by applying production parameters.

2. The figures for livestock product for the years 2006-07and onwards was calculated by applying production parameters to the projected population of 2006-07 and 2007-08.
3. Please note that the units of heads and trotters are in 000 Tons not in 000 No's.

Whereas, Table 9 below shows the production of hides and skin year 2006.

Table 9: Sukkur region animal hides and skins in Year 2006					
Districts	**Buffalo**	**Cow**	**Sheep**	**Goat**	**Total**
Shikarpur	34,932	30,439	30,582	68,154	164,107
Khairpur	60,235	52,488	52,735	117,523	282,981
Sukkur	35,301	30,760	30,905	68,874	165,841
Naushehro Feroz	29,490	25,697	25,818	57,537	138,543
Dadu	31,474	27,426	27,555	61,409	147,864
Larkana	52,776	45,988	46,205	102,971	247,940
Jacobabad	28,917	25,198	25,317	56,420	135,852
Qamber-Shahdadkot	14,371	12,523	12,582	28,039	67,515
Ghotki	17,112	14,911	14,981	33,386	80,389
Kashmore	11,397	9,931	9,978	22,236	53,542
Jafarabad	21,972	19,146	19,236	42,868	103,221
Sibi	8,396	7,316	7,351	16,382	39,445
Total	346,374	301,823	303,244	675,799	1,627,240
Source: Pakistan Livestock Census 2006					

Fisheries sector value-chain analysis
Apart from marine fisheries, inland fisheries (comprising of rivers, lakes, ponds, dams, etc.) are also very important source of animal protein. The consumption of fish is very low in Pakistan. The fisheries sector in Pakistan has not received due attention and as a consequence its contribution in Pakistan's economy has been relatively meager. There are substantial waterlogged and saline areas in Sindh, which are no longer suited for crop production; they can be developed for fish culture. There is a need to examine the growth and instability of inland fish farming in Sindh before an intensive campaign can be launched to convince farmers to engage in fish farming.

This low average in Pakistan becomes more crucial when other resources of protein are also below the required level. Per capita per annum consumption of fish in Sindh though declined from 4.25 kgs per capita per annum in 1975-76 to 2.98 kgs per capita per annum in 2002-03, is second. This indicates that fish in Sindh occupy a prominent place in consumer's diet (though its consumption has decreased). The consumption of fish in Sindh can increase if the price of fish is brought down to a reasonable level and to do this it is essential that production of fish is increased.

Considering fish production, Shikarpur, Kashmore and Jacobabad districts holds scores of fish farms. Basically, due to increased water logging in these areas, there had been natural ponds, which people later converted into fish ponds. Furthermore, decline in fish production from 2005 to 2010 has been recorded significantly as reflects in Table 10 . Major reasons are poor fish farm handling skills, poor transportation, unavailability of skilled labour, unavailability of quality inputs and traditional fishing hatching methods. Apart, natural disasters specifically super flood of 2010 has significantly affected inland fisheries sector, furthermore torrential rains has drastically damaged the sector.

Table 10: Sukkur project region fish production in metric tons

Sukkur Project Region Fish Production in Metric Tons							Average
District	2005	2006	2007	2008	2009	2010	
Shikarpur	5405	5767	6860	6923	7131	5840	6321
Khairpur	2642	2780	5840	1073	1080	580	2332
Sukkur	3672	3975	3750	6153	6158	455	4027
Naushahro Feroze	6582	6890	4631	1765	1699	87	3609
Dadu	4998	2648	19527	5122	6211	9	6419
Larkana	10845	5778	6890	11325	12315	680	7972
Jacobabad	7996	1820	2000	3305	3355	393	3144
Kamber-Shahdadkot	0	5882	0	4973	5123	1057	2839
Ghotki	1218	1242	4360	5251	5315	1253	3106
Kashmore	0	6780	0	5113	5987	4230	3685
Jafarabad	-	0	0	0	0	0	0
Sibi	-	0	0	0	0	0	0
Grand Total							43,456.84

Source: Directorate of Inland Fisheries, Sind. Hyderabad

The share of Sindh in total, and marine fish production is though more than 66 percent which has exhibited fluctuating trend. It became 68.2 percent of the total in 2002-03 compared with 72.9 percent in 1975-76. The share of inland fish production in total production increased from 8.0 percent in 1975-78 to 18.3 percent in 2002-03. Its share though somewhat decreased in 2002-03, is showing an increasing trend. As far as the share of inland fish production in total inland production of Pakistan is concerned, it is showing decreasing trend. It was 70.0 percent in 1975-76 and in 2002-03 decreased to 63.8 percent. The share of Sindh's marine production decreased while that of inland production, it increased.

Appraisal of Livestock and Fisheries Value Chains based on Primary Data

Selection and prioritization of the value chain

This process was carried out to identify the value chains that offer most promising prospect for economic growth and poverty alleviation through employment generation. It was based on the review of the key issues that have an impact on the development of the livestock and fisheries value chains and the capacity of a given region to produce and market livestock products and byproducts in the domestic and international markets. The choice of the value chains was further refined by applying priority criteria, weighting their relative importance and ranking on score sheet based on the composite index that was calculated on the basis of seven factors used in the grid analysis. A graphical illustration of the summarized overview of prioritization is shown in following figure.
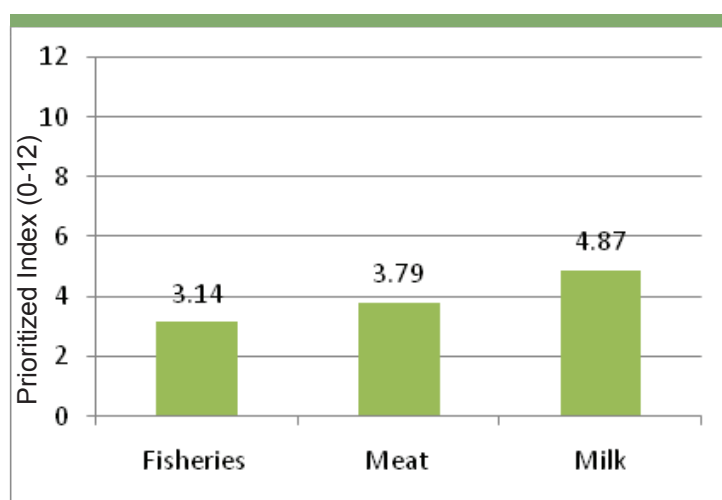

Figure 1: Prioritization of livestock and fisheries
Source: PRLA field survey August, 2012

As is evident from the prioritization index, milk ranked first securing highest priority points 4.87, followed by meat sector with 3.79 points, however inland fisheries stands third priority with 3.14 points.

The FGDs conducted within Sukkur region showed that Sukkur, Khairpur and Shikarpur are the major milking shed areas among all districts of region where maximum dairy farms especially commercial farms exist. Jacobabad has also witnessed significant growth in milk sector. Due to time and resource constraints various adjoining districts were not covered which include Shikarpur, Ghotki, Kashmore etc, where huge potential in dairy value-chain exists. In fact in Sindh, every household keep milking animals for domestic purpose and at certain degree for commercial purpose. However, after the penetration of multinational companies in recent years peoples approach is entirely changed and exotic breeds are even reared in these farms by the people.

Factor wise prioritization of the value chain

Ranking of the livestock and fisheries value chains was carried out on the basis of following seven factors used in the grid analysis matrix;

Prioritization on the basis of percentage employment potential

Among both fisheries and livestock value-chains, milk subsector has the highest potential of 25% for employment is being generated by this sector. This is followed by meat sector with 18% employment, and fisheries stands third with 17% employment is claimed to be associated with fisheries sector in Sukkur region. Milk value-chain has the ability to create highest employment considering the fact that there are more actors involved in the value chain such as farm owners, dhoodhi, milk collectors, suppliers and distributors and milk processors etc. Furthermore, even at farm level animal handling needs intense labour, which is also contributing factor for generating more employment opportunities in milk sector. Additionally, it is believed that through awareness, and capacity building through imparting technical skills more employment opportunities may be created. There are access issues and if proper infrastructure is developed both at farm level and at market level, this could be transformed into a full-fledge commercial business, hence can generate more employment opportunities for both male and females.

Prioritization of different livestock and fisheries value chains with regard to their ability to create employment is shown in Figure 2.


Figure 2: Prioritization on the basis of % employment potential
Source: PRLA field survey August, 2012
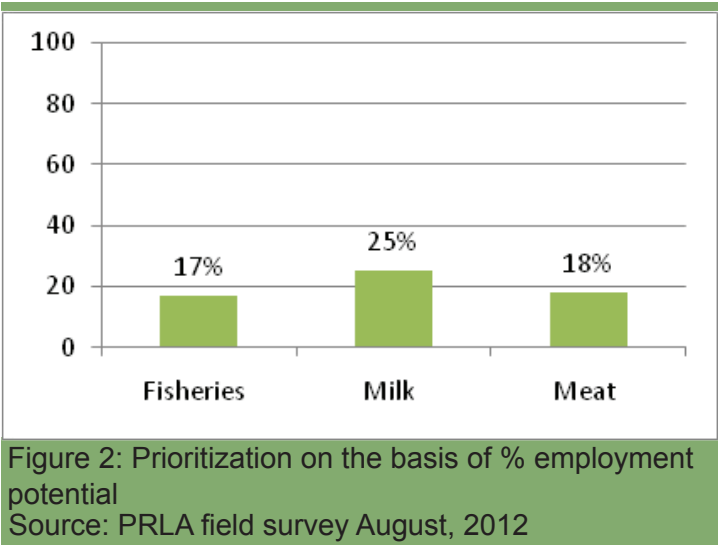
Prioritization on the basis of percentage commercialization
Commercialization can be described as the percentage of the product that is marketed. The data collected through focus group discussion showed that meat is 98% commercialized. The reason being that animals raised for meat purpose does not remain much productive while rearing period, likewise buffaloes which give milk on daily basis. Hence, the probability is quite less one the supply side, yet the demand is huge ranging from routine households to different religious and social gatherings where meat is served everywhere.

In Sukkur project region, 93% commercialization is being observed in milk sector. This is mainly due to existence of different multinational companies such as Nestle Pakistan, Engro Foods and Millac. The remaining 7% milk is generally used for domestic purpose. There are commercial farms locally called "Barra", who generally sell milk to consumers directly or through outlets. However, in Sindh each household particularly in rural areas keep animals for milk purpose, these households don't commercially sell the milk however in case of surplus or need of money they used to sell milk to nearby towns or hotels. Even rural communities keep animals as their saving and investments which they encash in dire need.

Fisheries stand third with 92% commercialization. Due to poor supply of sea food to interior Sindh, and surfacing of more saline areas, inland fish farms are mushrooming rapidly and fish as a high demand in Sindh.Figure 3, shows the commercialization in fisheries and livestock.

Figure 3:Prioritization on the basis of % commercialization
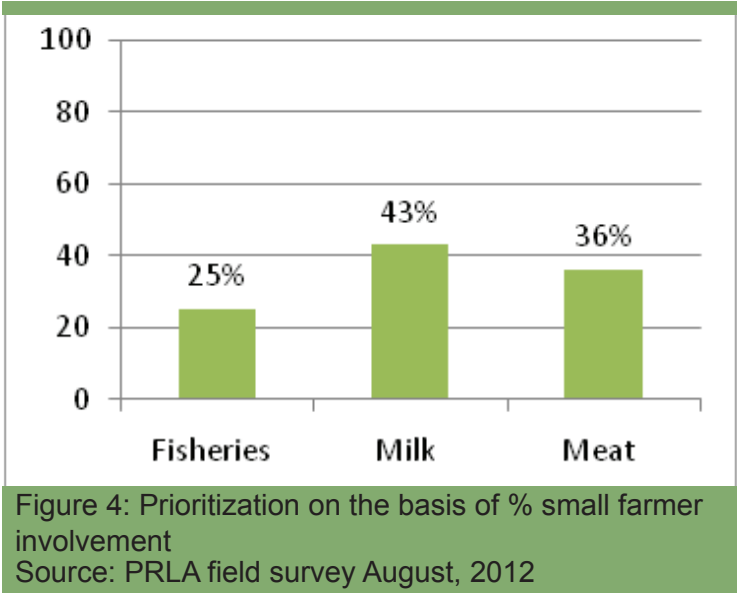Source: PRLA field survey August, 2012
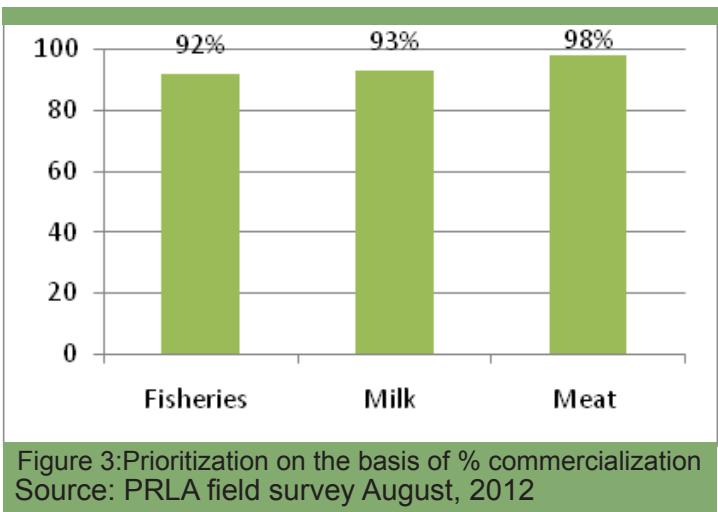
Furthermore for increased commercialization technical assistance is pre-requisite. Community in general doesn't have the capacity to analyze stated value chains in terms of cost-benefit analysis (comparative analysis about the income generated through agriculture activity and project income from fish-farm over similar piece of land). Intensive counseling and consultative services are required at this level. Additionally, local peoples are unorganized, and they lack access to high-end markets. This could be covered through arranging more exhibitions, workshops, seminars at national, provincial and local level. There is dire need to attract local entrepreneurs towards processing rather selling their commodities in raw shape. Establishment of proper wholesale markets, proper infrastructure and trained staff would broaden the scope of the business in local, regional and global markets.

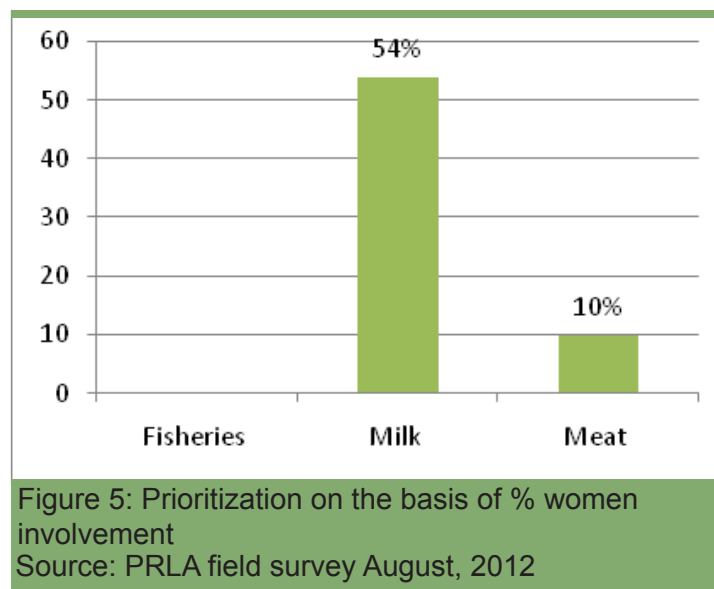**Prioritization on the basis of percentage small farmer involvement**
The assessment of livestock value chains on the basis of small farmer involvement in Sukkur region revealed that milk value chain has the highest percentage (43%) of small farmer's involvement. This is easily explained by the fact that 70-80% of milking animals belong to small holders with 1-4 animals. Whereas 36% of small farmers are involved in meat business. This is followed by fisheries which stands around 25% small farmers involvement. Since animals are kept at household level, and generally consider it a domestic liability to raise animals at household level. Yet, most of the small farmers do not afford the fodder expenditure and animals are susceptible to disease. Hence, mostly big landholders keep large herds as they can address and hold the capacity to fulfill both above mentioned requirements.

There is a need to bridge linkages among farmers and extension service providers in both livestock and fisheries sectors. Considering their vulnerability small farmers are found reluctant to invest more and expand their existing herds/farms. If access to veterinary services (either government provided or private firms owned) are ensured at their door-step would be considered a major breakthrough to encourage small farmers to invest more in these sectors. Furthermore, unavailability of quality input and unregulated prices have also put them on distance. Very small number of small farmers are engaged in processing, this is due to market monopoly and unavailability of technical assistance at local level. Formation of farm owner groups would strengthen their standing and collaborative efforts such as establishment of cold-chains, milk collection points, establishment of small processing units etc would make big difference in this area.

Figure 4: Prioritization on the basis of % small farmer involvement
Source: PRLA field survey August, 2012

Prioritization on the basis of percentage women involvement
Women involvement is considered to be an important factor for prioritization of the value chains. As per information extracted through focus group discussions, it was found that milk subsector has the highest women involvement with 54% as shown in Figure 5. There is small fraction of women only 10% involved in meat subsector. It has been learnt that due to cultural barriers and mobility women are completely away from fisheries value chain. whereas, women involvement in milk and meat value chain is limited since women have no role in marketing of the milk and meat value chains. Engro foundation recently implemented a project to train 1200 Lady Livestock Workers (LLWs), which is considered a major initiative in this region. The project made people to rethink and reshape the stereotype role of women in Sindhi society. This window of opportunity has redefined that women has far larger roles in community and society. Hence, through skill enhancement women's role could be further enhanced both at farm level and at processing level.
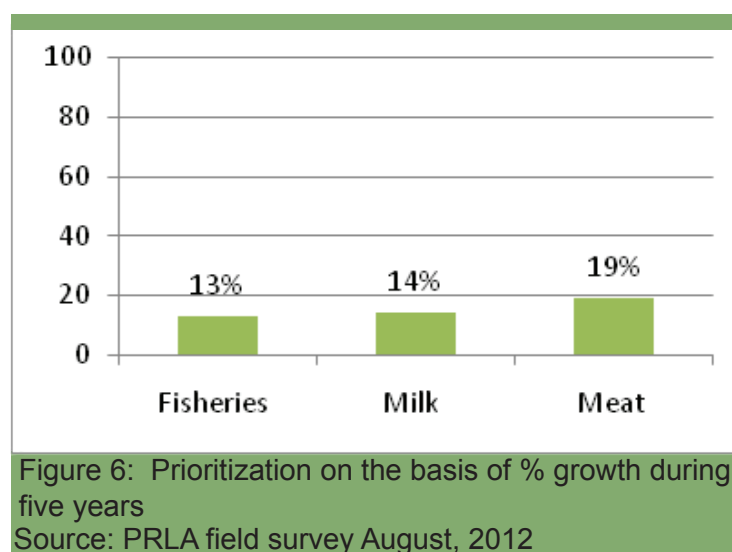
Figure 5: Prioritization on the basis of % women involvement
Source: PRLA field survey August, 2012

Prioritization on the basis of percentage growth during past five years
Growth is the most important factor for prioritization of a value chain as it gives a clear idea of the potential of subsector in a particular region. The livestock and fisheries value chains were assessed on the basis of their growth observed during the past five years in Sukkur region. Figure 6 below reflects 19%, 14% and 13% growth rates for meat, milk and fisheries value chains respectively during the past five years.

On the basis of FGDs conducted, Khairpur district showed the highest rank on the growth index for milk value chain followed by Sukkur and Larkana. Meat value chain observed highest growth in Sukkur while Khairpur and Larkana ranked second and third respectively on the growth index. Fisheries value chain observed maximum growth rate in Larkana and Jacobabad making these high potential clusters for the particular value chains.

Low quality fodder seed, and other input supplies are major hindrance in growth and productivity. Doubtlessly, more people are coming to this business however there is still serious gaps in paradigm shift. With increased population and trade relations demand is increasing, regrettably through traditional practices this demand could not be met. Hence, there is need to breed improvement, model dairy and fisheries farm development along with introducing new varieties, financial assistance by micro finance institutions to attract poor and marginalized to engage in this business.

Figure 6: Prioritization on the basis of % growth during five years
Source: PRLA field survey August, 2012

Prioritization on the basis of percentage losses

The losses in milk and meat include both pre and post production losses. Pre-production losses mean mortality or inability of animal to produce due to various reasons whereas post production losses occur usually during handling and transportation and are highest in milk value chain due to unavailability of processing (i.e. Pasteurization) facilities. Losses in meat value chain usually attribute to pre-production losses. Fisheries value chain experience more post production losses due to the perishable nature and lack of proper mode of transportation to the high-end markets. Animal losses are high due to diseases which are concerned due to poor access to veterinary services and poor knowledge of farm owners. Unregulated prices of livestock and fisheries also bestow little to owners and bestow lion's share to commission agents. Losses could be significantly reduced through providing technical assistance.

Pre and Post production losses have high impact on the selection and prioritization of a particular commodity or value chain. Fisheries value-chain experienced the highest losses that is up to 13%. This is followed by milk value-chain stands second with 11% losses. There are 07% losses recorded in meat value chain mostly due to unavailability of cold chain and lack of proper transportation facilities. An illustration of prioritization of value chains on the basis of losses is portrayed in Figure 7 below.

Figure 7: Prioritization on the basis of % losses
Source: PRLA field survey August, 2012
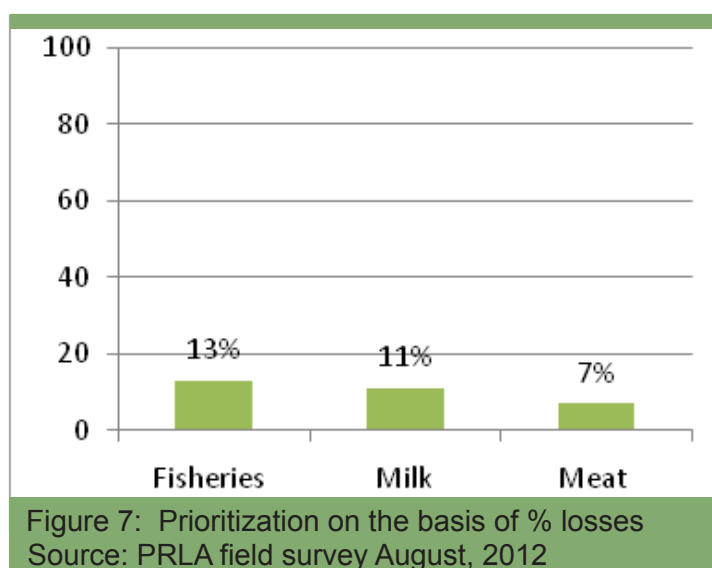
Prioritization on the basis of percentage household involvement

Percentage of households involved is another important factor in the process of prioritization a particular value chain. The data collected through FGDs and analyzed for the household involvement in livestock and fisheries value chains showed results that are interpreted in graphical presentation below. As illustrated below, milk value chain had the highest index of 36% household involvement since majority of the rural population is engaged either directly or indirectly in milk value chain. Second on the priority index was the meat value chain with 23% household involvement followed by inland fisheries with 15% household involvement.

Figure 8: Prioritization on the basis of % household involvement
Source: PRLA field survey August, 2012
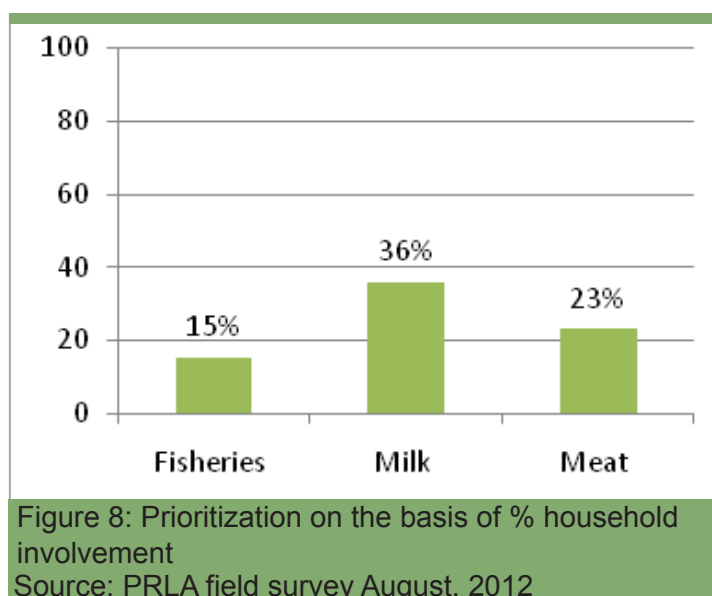
Prioritized Opportunities and Constraints in Livestock and Fisheries Value Chains

Prioritized opportunities and constraints in milk value chain

Paired ranking tool was used for prioritization of the opportunities. On the basis of FGDs data analysis for milk value chain, impartment of technical skills for milk handling stands the first priority. Apart, provision of veterinary services, relevant equipment, animal husbandry trainings, storage were among the potential opportunities need to be explored further.The prioritized opportunities identified can be seen in Table 11.

Table 11: Prioritization of opportunities in milk value chain

Prioritized opportunities	Score
Capacity building	High
Veterinary services	High
Technical handling skills	Medium
Proper equipment	Medium
Proper Animal husbandry training	Medium
Coordination with livestock department	Medium
Chillers	Medium
Transportation issues	Low
Transportation facilities	Low
Storage	Low

Source: PRLA activitiy August, 2012

Lack of improved breed animals, prophylactic veterinary care and chillers for milk collection were as the high intensity constraints hampering the growth of dairy sector in Sukkur region. Inadequate veterinary health services, lack of proper milk transportation system & financial resources along with poor market linkages were ranked as medium intensity constraints.The constraints in milk value chain were identified and prioritized by the participants in FGDs. Shown below is a ranking index for the constraints.

Table 12: Prioritization of constraints in milk value chain

Prioritized constraints	Intensity
Lack of improved breed animals	High
Lack of policy for price control	High
Lack of quality prophylactic measures	High
Lack of resources and awarness for milk chillers	High
Inadequate veterinary services	Medium
Lack of proper milk transportation system	Medium
Lack of investment resources	Medium
Poor market linkages	Medium
Lack of proper farm management practices	Low

Source: PRLA activitiy August, 2012

These constraints can be addressed through breed improvement (either by introducing high yielding animals or cross breeding with high producing breeds), improved farm management practices, timely and efficient availability of veterinary health services, establishment of integrated milk collection and transportation system. Easy access to soft loans can help resolve financial issues hampering the growth of dairy value chain.

Prioritized opportunities and constraints in meat and byproducts value chains
The highest ranking opportunities in meat value chains as identified by participants in FGDs were provision improved breed animals, fodder and better farm management practices. Provision of meat chillers and post slaughter processing machinery were ranked as medium grade opportunities in meat value chain.

The prioritized opportunities, in meat and livestock byproducts value chains, scored and ranked by the participants of FGDs in Sukkur region are listed below in Table 13.

Table 13: Prioritization of opportunities in meat value chain	
Prioritization of opportunities	**High**
Availability of improved breed animals	Medium
Availability of improved feed/fodder	Medium
Improved farm management practices	Medium
Cold storage/meat chillers	Medium
Capacity building & awareness	Medium
Improved veterinary health services	Medium
Packing & packaging of meat	Low
Post slaughter meat processing machinery	Low
Farmer enterprise group formation	Low
Source: PRLA activitiy August, 2012	

With regard to the byproducts value chain, introduction of improved breed animals especially sheep for wool production and better farm management practices were highlighted as the top ranking opportunity followed by provision of wool shearing equipment and capacity building and training in handling of byproducts.

Table 14 below is the list of prioritized opportunities in livestock byproducts value chain.

Table 14: Prioritization of opportunities in livestock byproducts		
Availability of Improved breeds (for wool)	6	1
Improved animal feed/fodder	6	1
Improved farm management practices	5	2
Provision of wool shearers	5	2
Awareness about by-products production	3	3
Training in by-products handling	3	3
Source: PRLA activitiy August, 2012		

The major constraints in both meat and byproducts value chains were lack of improved breed animals and technical & financial resources; absence of cold storages for meat, skin & hides; lack of awareness & training in better farm management practices, calf rearing and feedlot fattening and poor veterinary services.

A strategic approach to exploit opportunities and address constraints is required for meat and byproducts value chains to flourish as viable agribusiness in order to address food security issues and export led growth. Table 15 shows the lists of constraints (merged) for both meat and livestock byproducts value chains as per ranking done through FGDs data analysis.

Table 15: Prioritization of constraints in meat and by products	
Prioritized constraints	**Intensity**
Lack of improved breed animals	High
Lack of technical & financial resources	High
Lack of awareness/availability of improved feed/fodder	High
Absence of cold storages for meat & by-products	High
Lack of training in calf rearing	High
Lack of awareness/training in skin/hide handling	High
Lack of proper livestock management	Medium
Lack of veterinary services	Medium
Lack of awareness/training in feed lot fattening	Medium
Source: PRLA activitiy August, 2012	

Prioritized opportunities and constraints in fisheries value chain
The participants of FGDs in Sukkur region identified provision of quality fish seed/fingerlings as the highest potential opportunity followed by availability of refer containers. Demand in the national market and availability of fish hatchery equipment were ranked third and fourth respectively on the index of prioritized opportunities.The identified opportunities can be seen in Table 16.

Table 16: Opportunities in fisheries value chain		
Prioritized Opportunities	**Score**	**Rank**
Provision of quality fish seeds/fingerlings	12	1
Availability of refer containers	9	2
Demand in the national market	4	3
Availability of fish hatchery equipment	3	4
Source: PRLA activitiy August, 2012		

Highlighted constraints in fisheries were lack of technical & financial resources, unavailability of quality fish seed, lack of awareness and capacity building about fish farming, packing and packaging and poor market linkages which can be seen in Table 17 below.

Table 17: Constraints in fisheries value chain	
Prioritized constraints	**Intensity**
Lack of technical & financial resources	High
Unavailability of quality fish seed/fingerlings	High
Lack of awareness about fish farming	High
Packing & packaging of fish	High
Poor market linkages	Medium
Capacity building/training in fish farming	Low
Source: PRLA activitiy August, 2012	

State of the Service Providers

Service providers are of prime importance in all value chains. These include Government bodies, private sector, NGOs and associations, middlemen, buyers, market agents and exporters. A detailed assessment of the service providers, services offered and their strength (determined by their availability, efficiency of services and if those are free, on cash or credit) in Sukkur region, was carried out using the information provided by the participants of FGDs during PRLA exercise. The role of Government organizations such as Agriculture Extension, Livestock and Dairy Development Department and Fisheries Department is to provide technical information and assistance, on farm and off-farm trainings and creating awareness about technological innovations relevant to a particular sub-sector where as the local administration defines and regulate prices. Although the services provided by Government agencies were free, their ranking was weak in all districts of Sukkur region.

Private sector encompassed all input suppliers and facilitators within the value chain. The services provided by them were paid and on cash basis. However, they ranked medium on the index in almost all districts because of their demand, easy availability and efficiency. Engro and Nestle has distinct position in this, because of their approach and marketing strategy. The participants of FGDs provided information about the service providers and related livestock and fisheries value chains and ranked them as shown in Table 18 .

Table 18: State of the service providers				
Service Provider	**District**	**Strength**	**Paid/Free**	**Services Provided**
Livestock & Dairy Development Department/Fisheries Department	Sukkur N. Feroze Khairpur Ghotki Jacobabad Larkana	Medium Weak Medium Weak Strong Strong	Free Free Free Free Free Free	Training & technical assistance
Input suppliers	All PRLA districts	Medium	Cash	Input Supplies
Middle man	All PRLA districts	Strong	Credit	Intermediate link between producers & market
Local confectioners	All PRLA Districts	Weak	Free	Buy milk
District administration	All PRLA districts[1]	Weak	Free	Fix & regulate prices
Banks & Co-operatives	All PRLA districts	Weak	Cash	Credit on mark up
NGOs	All PRLA districts	Medium	Free	Training & technical assistance
Private companies/BDSPs	All PRLA districts	Weak	Free	Technical assistance
Producer's Associations	All PRLA districts	Weak	Free	Training & information
Department of Agriculture Extension	All PRLA districts	Strong	Free	Guidance and information on improved agri practices
Private Agriculture chemical supplies	All PRLA districts	Medium	Cash	Supply pesticides
Market agents	All PRLA districts	Weak	Cash	Supply inputs & animals from other districts
Veterinary medicine companies	All PRLA districts	Weak	Cash	Supply vet medicines, vaccines etc
Source: PRLA activitiy August, 2012				

[9]All districts denotes districts where PRLA is conducted (Sukkur, Khairpur, Larkana, Ghotki, N.Feroze, Jacobabad)

NGOs and fellow enterprises had strong linkages across all districts, as most of the organizations has their district office in each district. Banks were also mentioned as weak link because of the difficult access for small holders and high markup rates. Middle man and market agents were the strongest link among all service providers in dairy and meat value chains because they are the sole source of readily available credit facility for majority of the small holders.

State of the Market Linkages

Market linkage plays an important role in prioritizing value chains in a particular region. It also helps determine the price of a particular produce and profitability. To understand the marketing of livestock and products, an assessment with regard to the strength of market linkages was also done through data that was collected during FGDs in Sukkur region and is depicted in Table 19 below.

Market linkages were assessed and ranked as strong, medium or weak depending on the basis of share of the produce in that particular market, distance from the production site and the cost of transportation. With regard to dairy and meat value chains, local markets had the strongest links in almost all districts of Sukkur region due to easy access, less cost of transportation and less losses. Due to existence of Engro Foods and Nestle Pakistan in Sukkur, this district is the hub of milk collection and all additional milk is being sent to this district.

Table 19: State of market linkages			
Subsector	**District**	**Market linked**	**Strength**
Milk & Meat	Khairpur	Khairpur	Strong
		Sukkur	Strong
Milk & Meat	Sukkur	Sukkur	Strong
Milk & Meat	Larkana	Larkana	Strong
		Sukkur	Strong
Milk & Meat	N. Feroze	N.Feroze	Strong
Milk & Meat		Sukkur	Strong
Milk & Meat	Jacobabad	Jacobabad	Strong
Milk & Meat		Sukkur	Strong
Milk & Meat	Ghotki	Sukkur	Strong
Source: PRLA activitiy August, 2012			

Conclusion

Based on the overall analysis of opportunities and constrains separately for dairy, meat and fish value chains, the key constraints which hampers the abilities of livestock sectors both external and internal constraints include; adverse macroeconomic conditions (high taxes, high interest rates), lack of institutional support., quality constraints includes little understanding of processors' requirements, lack of laboratories and instruments for quality control, price and quality of the veterinary services.

Lack of infrastructural facalities such as, inadequacy of, roads, electricity, weighing stations, cattle dips, slaughtering and processing facilities (which raises transaction costs, exacerbates information asymmetries between producers and traders.

In spite of the constrains mentioned above, lot of potential exists in dairy, meat and fisheries value chains in sukkur region.

Based on the PRLA, following interventions can be suggested for strenghtening future livestockvalue chains summary conclusions can be drawn

• Dairy, meat and fisheries value chains represent potential in terms of volumes, value and diversity.

• In dairy value chains un availability of quality veterinary services, lack of awareness on farm management, lack of awareness and limited availability of improved breed of animals of high milk yields, lack of storage and milk quality issues and lack of facilities for small farmers for processing of value added dairy products are the main issues. These issues may be addressed at each level, i.e. farm, processing and market level by inducing improved farm management, feed and fodder, vetenairy services and provision of improved breed animals.

• Immobility, acces to assetes, productive resources, maket information are some major constraints that hinder women involvement in accessing and maintaning profitable market niches and capture a large slice of income. With this existance of social and cultural trends of society that makes male dominant also effect women involvement at processing and markeitng level. Therefore, role of women needs to explore more in terms of ownership of animals/assets and the profit accordingly.

• In Meat value chain again the limited availability of veterinary services, lack of awareness on farm management, lack of awareness and limited availability of improved breed for high yielding meat animals, limited meat processing & packing facilities are the major issues that needs to be addressed accordingly at farm, processing and market levels.The perishable nature of meat and the lack of storage facilities results in limited availability of quality meat for the consumers in the market.

• In fishries value chain again there is lot of potential.Inland fisheries is common in region.The issues in the fisheries value chain starts from the seed as there are limited fish seed hatcheries in the region, due to far flung areas the mortality of seed during transportation is high, so due to limited availability of fish hatcheries, poor transportation facilities for seed from hatchery to farm, limited awareness to fish farm owners for the basic needs, un-availability of improved variety of seed, poor farm management practices, no or limited fish processing facilities including storage of fish and limited awareness on food quality the farmers and processors are unable to export and even fetch the good prices in local high end markets. There is no involvement of women in fisheries in the region as observed during the data collection.

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